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ABSTRACT

The purposes of this study were (1) to investigate the metalinguistic knowledge children have acquired from their environment before formal instruction, and (2) to examine the relationship between evolving writing and reading behavior. Twenty middle-class children ranging in age from 4.1 years to 5.11 years were selected. The Goodman and Cox Preschool Concept of Reading and Preschool Concept of Writing Interviews (1977) were used to assess the subjects' concepts and attitudes about reading and writing. Further information about children's evolving writing behavior was obtained through an informal, unstructured writing session in which the child was given a blank piece of paper and asked to write anything he or she wanted. Information about the child's evolving reading behavior was obtained through the Book Handling Knowledge Interview. Subjects were given a short picture book to read and, during the reading, questions were asked to elicit knowledge of such things as beginning and end of story, front of book, and name of book. Subjects' knowledge of directionality, separation of print from pictures, letters and words, punctuation, and other reading behaviors, were further measured by the Stanford Binet Intelligence Scale. Results indicated that while preschool children may not have fully developed concepts of the linguistic terms used in an instructional setting (such as "letter", "word", and "sentance") and may not be able to indicate word-by-word matching of spoken/written words, they do have a functional concept of the purpose of reading and writing, as well as immature but developing concepts of linguistic terms and the direction of print both on a page and in a book. (Author/MP)

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The Development of Literacy in Middle-class Preschool Children

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ABSTRACT

Several tests and interviews, including the Sand Test (Clay, 1976), Book Handling Knowledge (Goodman & Attewerger, 1977), "Preschool Concepts of Reading" and "Preschool Concepts of Writing" (Goodman & Cox, 1977) as well as the Stanford Binet Intelligence Scale (Terman & Merrill, 1973), were administered to twenty preschool children ranging in age from 4 years 1 month to 5 years 11 months in order to investigate the metalinguistic knowledge children have acquired from their environment before formal instruction and to examine the relationship between evolving reading and writing behaviors.

Results indicated that while preschool children may not have fully developed concepts of linguistic terms used in an instructional setting, such as "letter," "word," and "sentence," and may not be able to indicate word-by-word matching of spoken/written words, they do have a functional concept for the purpose of reading and writing, as well as immature but developing concepts for terms such as "word" and "letter" and the direction of print both on a page and in a book. Furthermore, results of this study lend support for the existence of a relationship between emerging reading and writing behaviors.

By the time a child enters first grade he has learned a great deal about his language. Young children's knowledge is most evident in their oral language production but there is a growing realization that many children have accumulated some knowledge of written language before formal instruction. Educators are beginning to explore the nature of young children's interest and knowledge of print.

Carol Chomsky (1976), who studied the 'languaging' of her own children, hypothesized that children displayed their awareness of print by producing it, even before reading it. Ferreiro (1977) has concluded that if children are to understand the writing system of their culture, they must actively construct the writing system. Children's first attempts to actively construct the writing system have often been misunderstood as random efforts simply to reproduce letters in a mechanical fashion. Often a child's motive for reproducing letters indeed may be an effort to improve his skill in the motor behavior required in print production. However, the work of Read (1975) has shown that while children's first attempts to produce meaningful written language may not appear as a meaningful message due to the random appearance of the letters and the incorrect spellings, children often are using letters purposefully. In focusing on the writing and consequent spelling used by young children Read has discovered the children invent spelling by utilizing their knowledge of letter "names" rather than the traditional phones represented by letters to graphically represent the phonemes produced in their language. Through the utilization of letter names children create their own spelling of words which Read has termed as "invented" spelling. Furthermore, Henderson and his associates (1971-1972) have found that children continue to use systematic letter-name strategies even after they have been given formal instruction in written

language.

While undoubtedly there are times when the young child's motives for making marks on a paper are simply that, making marks on paper with no intent for creating a message, an extensive investigation by Clay (1975) indicated that efforts of beginning writers showed no clear developmental sequences in the production of letters, words, or sentences. She found that no sequences are found in which letters are written before words, or words before sentences.

Wiseman and Watson (1980) report that children as young as four years of age had learned that letters have to do with writing and that writing has a certain form. Even children this young spelled their names, represented beginning sounds, and practiced the rudiments of spelling behavior.

Little has been done to describe the emerging development of reading before formal instruction. Ylisto (1967) concludes that children begin the reading process by discovering for themselves that printed symbols substantiate for auditory symbols. She also suggested that children's initial responses to print originate from their natural environment. Ylisto felt that the reading process consisted of sequential steps beginning with the first awareness of print in the environment, to identification of words in a social context (i.e., the identification of "MacDonalds" when connected with the golden arches), to identification of words in a total written language context.

Bennet (1971) found that the reading process began very early in a child's life. In his study, children without formal educational instruction performed skillfully on reading tasks in which they responded to language on food packages.

Harste & Burke (1980) supports Ylisto's work by concluding that children begin the reading process by first noticing print in social contexts.

Furthermore, Harste & Burke concluded that as language users and from their associations with print in social contexts, young children expect print to be meaningful.

Wiseman (1979) investigated reading behaviors and book handling knowledge of five year old children who were efficient readers and those who were not reading. Observations of book handling knowledge indicated that all children were capable of doing at least one or more of the following behaviors: 1) insertion of predictable words, 2) identification of letters, 3) identification of words, 4) insertion of repeated phrases, 5) retelling of a story, 6) indication of where to begin reading, 7) indication of the left-to-right direction of print, and 8) reading unfamiliar print.

Other research has centered on children who have learned to read fluently before instruction. The research on preschool reading was pioneered by Durkin (1961) who investigated home backgrounds of children who were reading before school. Other investigators have involved possible related variables (King & Frieson, 1972), longitudinal endeavors (Clark, 1976), and case studies of young readers (Kreppner, 1963; Torrey, 1969). Although the literature on early reading has focused on many factors, a recent review on the topic (Teale, 1978) revealed that environment plays an important role in the acquisition of reading behavior.

The studies presented to date describe and delineate those factors in the background of early readers and search for variables which may significantly relate to those children who learn to read before formal instruction. However, research has seldom focused on actual behaviors of preschool children in their efforts to organize and attach meaning to the written language in their environment. In investigating the miscues of early readers, Wiseman (1979) found that those children who were reading before instruction were utilizing information from all three language systems in written language (i.e., syntactic, semantics, and graphophonemic); however,

their use of language systems was less effective than more experienced readers. While the information in Wiseman's study provides useful information concerning the behaviors of early readers, it does not provide insights about behaviors that preceed reading in a total written context.

To date research has tended to focus on the writing of young children or the reading of young children. Little is known about the relationship between evolving writing behavior and evolving reading behavior. Goodman and Goodman (1977) feel that instruction in reading and writing should be integrated. In a reading and writing model which focuses on interrelatedness, Harste and Burke (1977) argue that alternate language and communication systems support each other, especially in evolving language acquisition (i.e. reading or writing). Other researchers suggest that reading and writing are interrelated. Chomsky (1976) and Zutell (1978) both believe that reading and writing are alternate forms of written language and should not be treated as separate entities. The data collected by Wiseman (1979) also support the idea that reading and writing are mutually reinforcing. These two forms of written language appear to develop concurrently and data indicated that book handling knowledge and reading ability are related to advanced spelling strategies.

Purpose of Study

The purpose of this study was to investigate the metalinguistic knowledge children have acquired from their environment before formal instruction and to examine the relationship between evolving writing and reading behaviors.

Method

Sample. Letters explaining the project and asking permission for their

children to participate in the investigation were sent to all parents of four and five year old children attending a local private day care center. A sample of twenty children ranging in age from 4 years 1 month to 5 years 11 months were selected from the responding parents. With the exception of one child who was Oriental, all the children in the sample came from white, middle-class socio-economic homes.

Data Collection. Data were collected from each child on an individual basis in two or three separate sittings. Responses were taped recorded and later transcribed. The children were asked to respond to questions from interviews, to task-oriented situations, and to the Stanford Binet Intelligence Test (Terman & Merrill, 1973). Each of the interviews, task-oriented situations, are described briefly below.

Instruments. The Goodman and Cox (1977) "Preschool Concepts of Reading" and "Preschool Concepts of Writing" interviews were used to obtain concepts and attitudes about reading and writing, i.e., "Why do people write?" "Why do people read?" Further information about children's evolving writing behaviors were obtained through an informal unstructured writing session where the child was given a blank piece of paper and asked to write anything he wanted to write. A written conversation task resulted in further data concerning the children's writing behaviors. The written conversation task requires the examiner to state a question, i.e., "What is your name?" "Do you have a sister?", and then write the question on a piece of paper. The child then is asked to respond in writing.

The "Book Handling Knowledge" (Goodman & Attewerger, 1977) interview was integrated with the reading of a short picture book. During the reading, questions designed to elicit behaviors which would indicate knowledge of

such things as beginning and end of story, front of book and name of book, were asked. To obtain further knowledge about the subject's evolving understanding of appropriate reading behaviors, the Sand Test (Clay, 1976) was administered. The Sand Test was designed to test behaviors such as knowledge of directionality, separation of print from pictures, knowledge of letters, words, punctuation, and other reading behaviors.

Analysis of the Data. Since the purpose of this study was to investigate evolving reading and writing beahviors of young children, the most appropriate technique for analyzing the data was description. Therefore, observed behaviors were categorized according to knowledge represented by the behavior and the categories were ordered according to frequency of occurrence across children. The children were then listed in an ordered sequence according to the number of understandings they demonstrated. Separate sets of categories were determined for the reading and the writing behaviors. The children were then rank ordered first for number of observed reading understandings, second for number of observed writing understandings, third for age, and fourth for IQ. Rank order correlations were then calculated in order to determine possible relationships between the variables of reading knowledge, writing knowledge, age, and IQ.

Results and Discussion

The results of this study indicate that even very young children who have not been exposed to formal training are learning from incidental events in their environment important concepts related to reading and writing. Reading behaviors tapped by the instruments used in this study resulted in 25 "knowledge" categories. The number of categories for which behaviors were demonstrated by any one child ranged from one to

twenty-five. The child who demonstrated behaviors for all categories was reading well above the second grade level. The observed writing behaviors resulted in 21 categories some of which were "mechanical" in nature, some of which represented knowledge of writing and some of which represented both. Table 1 has been arranged to indicate reading-related concepts known by individual children as well as to indicate the number of children who understood each of the concepts. As can be seen from Table 1 even the youngest of the children could verbalize that "a book is to read" and all but one child could show where the front of the book was. While only four children actually stated that words are in books, several children knew that the words on the cover referred to the "name" of the book, could name other materials read such as magazines and newspapers, could separate print from pictures, and could indicate some understanding of the left-to-right sequence involved in reading the English language.

[Insert Table 1]

As Downing's work would suggest, only one child was able to indicate word-by-word matching of spoken/written words and that child was reading well above the second grade level. However, several children were able to isolate a single word when the task required them to isolate a word from all the words available on a page. Furthermore, several children were able to indicate the first letter of a word and could show the first word to read on a page indicating that while they may not have learned all the conventions of writing, they do have some understanding for the concept of a word.

Table 2 has been arranged in categories to indicate writing-related

Table 1

Categories of Reading-Related Concepts Known by Individual Children

Name-Age	Read a book	Indicate front of book	Pictures in book	One letter	Name of book	L-R page	Begin 1st page	Purpose of reading	L-R sequence	Read other materials	Separates print from pictures	Identifies pages	Return sweep	Begin on 1st word	Beginning and end of story	Know capitals	Watches print in book	Identifies words	Words in books	Author	Recognizes inverted print	Differentiates between reading & telling	Word/word matching	Period	Question mark
Jacob 4-2	✓																								
Angie 5-3	✓	✓	✓					✓																	
Chris 4-6	✓	✓		✓	✓													✓							
Jessie 4-1	✓	✓	✓			✓		✓		✓															
Blaine 4-3	✓	✓			✓	✓	✓	✓	✓			✓													
Veronica 5-4	✓	✓		✓	✓	✓		✓				✓					✓								
John 4-1	✓	✓	✓	✓	✓	✓				✓					✓	✓									
Jay 4-6	✓	✓	✓	✓	✓				✓	✓			✓												
Stephanie S. 5-11	✓	✓	✓	✓	✓		✓				✓	✓		✓											
Monica 4-10	✓	✓	✓	✓	✓	✓		✓					✓				✓		✓						
Nathan 5-6	✓	✓	✓	✓			✓		✓			✓	✓					✓							
Jon 4-6	✓	✓	✓	✓	✓	✓	✓		✓		✓			✓	✓							✓			
Kim W. 5-9	✓	✓	✓	✓		✓	✓	✓		✓	✓			✓		✓				✓					
Kim N. 5-2		✓	✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓					
Pedro 4-9	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					✓				
Angela 4-7	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓		✓							
Stephanie B. 4-8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓		✓				
Stacy 4-9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				✓			
Sharon 4-9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓				✓	✓				
Eugene 5-7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Observed behaviors

concepts known by individual children as well as to indicate the number of children who understood each of the concepts. As can be seen from Table 2 all but four of the children could write their name and could write letters other than those that appeared in their name. Fourteen of the children could verbalize a purpose for writing. Some of the children's comments were: "Because they want to learn their test;" "My dad writes when he wants to study his computer;" "So you can keep your answer;" "So they'll know what they need at the store;" "Because their teacher wants them to.'" Fourteen of the children also indicated that they had a partial understanding of the left-to-right sequence in writing. These children varied in their demonstration of knowledge. A common behavior was to begin a writing sequence in the proper order and then suddenly shift to a more random order. One child was consistent in a left-to-right sequence but then was just as apt to begin the next line above the first rather than below indicating that she was not yet familiar with the top-to-bottom order.

[Insert Table 2]

Less than half of the children demonstrated that they understood the difference between drawing and writing, could write a word other than their own name, or could verbalize any message associated with the letter sequences they may have written. The only child who demonstrated knowledge of conventional writing, i.e., standard spelling, spaces in writing, correct directional pattern, and construction of simple sentences, was the child who was reading. While seven of the children wrote a recognizable word, the most frequent words written were yes and no. One child who indicated she was

TABLE 2

Categories of Writing-Related Concepts Known by Individual Children

	Scribbles	Letter-like figures	Scribbles and Letters	Partial Representation of Name	Part Directional Pattern	Writes Name	Writes Letters*	Verbalizes Purpose	Letter Sequences	Letters Represent Meaning	Recognizable Word*	Differentiate Between Writing and Drawing	Word Group	Single Letter Represents Word*	Single Letter Represents Syllable*	Vowel Substitution	Standard Spelling	Spaces in Writing	Simple Sentence	Correct Directional Pattern	Correct Directional Pattern and Spaces
John 4-1				✓	✓																
Jacob 4-2				✓	✓			✓													
Jon 4-6				+		✓	✓														
Angie 5-3				+	✓	✓		✓													
Chris 4-6					✓		✓				✓		✓								
Blaine 4-3	✓			+		✓	✓														
Stephanie S. 5-11				+	✓	✓	✓														
Jessie 4-1	✓			+	✓	✓		✓													
Pedro 4-9				+	✓	✓	✓		✓												
Monica 4-10		✓		+	✓	✓	✓	✓													
Nathan 5-6				+	✓	✓	✓	✓	✓			✓									
Kim W. 5-9				+	✓	✓	✓	✓	✓			✓									
Stacy 4-9	+	✓	+	✓	✓		✓	✓		✓											
Jay 4-6	✓	✓	✓	+	✓	✓	✓	✓	✓	✓											
Stephanie B. 4-8	+	+	+	+	✓	✓	✓		✓	✓	✓										
Angela 4-7	+	+	+	+	+	✓	✓	✓	✓	✓	✓										
Sharon 4-9	+	+	✓	+	✓	✓	✓	✓	✓	✓	✓	✓									
Veronica 5-4	+	+	+	+	✓	✓	✓	✓	✓	✓	✓	✓									
Kim M. 5-2	+	+	+	+	+	✓	✓	✓	✓	✓	✓	✓			✓	✓					
Eugene 5-7	+	+	+	+	+	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓

*Not in name
✓Observed Behaviors
+Behaviors assumed to exist at an earlier date

writing a message used a single letter to represent a syllable and used vowel substitution, i.e., "e" for "o". Example writing performance from some of the writing categories are provided in Figure 1 to illustrate the nature of some of the writing behaviors designated to a particular category.

[Insert Figure 1]

Due to the nominal data provided by the reading and writing behaviors, all variables including the interval data of age and IQ scores were rank ordered in order to obtain rank order correlation coefficients between the variables. Table 3 provides the correlation coefficients between the variables of interest.

[Insert Table 3]

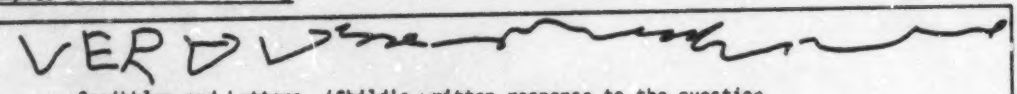
Due to the small number of subjects involved in this study, the correlations must be considered cautiously as the confidence interval for correlations dealing with such small numbers is quite broad. Nevertheless, the correlation coefficient between reading and writing is large enough to suggest support for the idea that there does exist a relationship between children's emerging awareness of reading and writing. Whether or not one area more strongly effects the development of the other is yet to be determined.

Conclusions

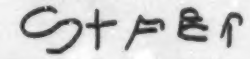
The focus of this study has been centered on efforts designed to uncover what children know about reading and writing before they encounter formal reading programs. If reading and writing instruction is to be meaningful to young children, then it would seem as though we must place emphasis on

FIGURE 1

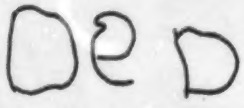
Examples of Children's Writing



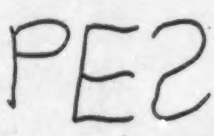
Scribbles and Letters (Child's written response to the question, "What is your name?")



Partial Representation of Name (Stacey)



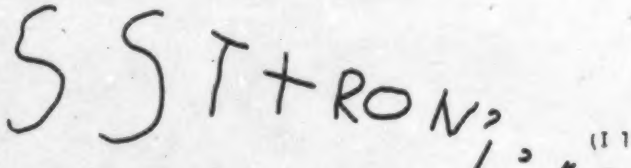
Vowel Substitution (Dog)



(Francis)

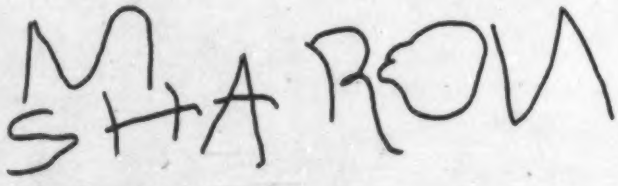
(Bigger)

Single Letter Represents Syllable



(I like to play on the swings.)

Letters Represent Words



Part Directional Pattern

TABLE 3

Rank Ordered Correlations (N=20)

Variables	Correlation Coefficients
Reading and Writing	.599**
Reading and Age	.359
Reading and IQ	.407
Writing and Age	.533*
Writing and IQ	.275

*p .05

**p .01

learning more about what the child knows about the written language as well as learning more about what purposes the child thinks written language can serve for him as well as for others.

For years we have been diagnosing and testing "readiness" for reading instruction. Competency-based assessment of "basic skills" is an issue in several legislatures across the United States. These activities indicate public education considers testing an integral part of instruction. But what are we testing and why?

Reading instructional methods may be ordered in a continuum with a synthetic deductive phonics approach at one end, an analytic inductive approach in the middle and a whole language approach at the other end. Many items on a readiness test are designed to measure those competencies necessary for a synthetic deductive phonics approach, i.e., letter names, language sounds in isolation, correspondence between letter names and language sounds, differences and similarities between language sounds within the context of a word. The roots of a synthetic phonics approach are in the alphabetic approach used in Colonial days (Durkin, 1968). In Colonial days children were thought to be "small" adults who were not as capable as adults simply because they had not had time to have as many experiences. The fact that young children are quite different from adults in the way in which they learn is well known today. Yet the translation of this fact into instructional application has been a slow process. While many beginning reading programs offer suggestions for encouraging language growth in a natural manner, there is still a great deal of emphases on learning "bits and pieces" of language with adult-like expectations of responses.

Readiness tests and corresponding beginning reading programs that

emphasize instruction based on language parts have abstracted language and have based instruction on those abstractions. In doing so the instruction that is provided not only is abstract but is based on learning things for which the child is least likely to have the background.

Children come to school having learned a great deal about written language from their environment. Among other things they have learned that reading and writing are purposeful activities that serve some meaningful function such as "Mother 'writes' checks to pay bills," or "Books are to tell stories." Furthermore, as evidenced by this study many young children have learned the difference between print and pictures, left-to-right sequencing and can isolate single letters which indicates that while they may not have learned to use the blank space between words to isolate single words, children are not seeing print as a mass of undiscriminated letters. As associations are made between meaningful events in their lives and written words, they are able to isolate single words.

Drawing from such strange bedfellows as Gagne and Piaget as well as many others, it seems most obvious that in teaching and learning, the task of the instruction is to provide instruction that builds on the child's present knowledge and the way in which he learns. Continued efforts to understand the child's view of the purpose of written language and what written language knowledge the child brings to school will provide appropriate guidelines for designing reading programs that build on what is known. When we build approaches on the child's knowledge base instruction becomes meaningful to the child.

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